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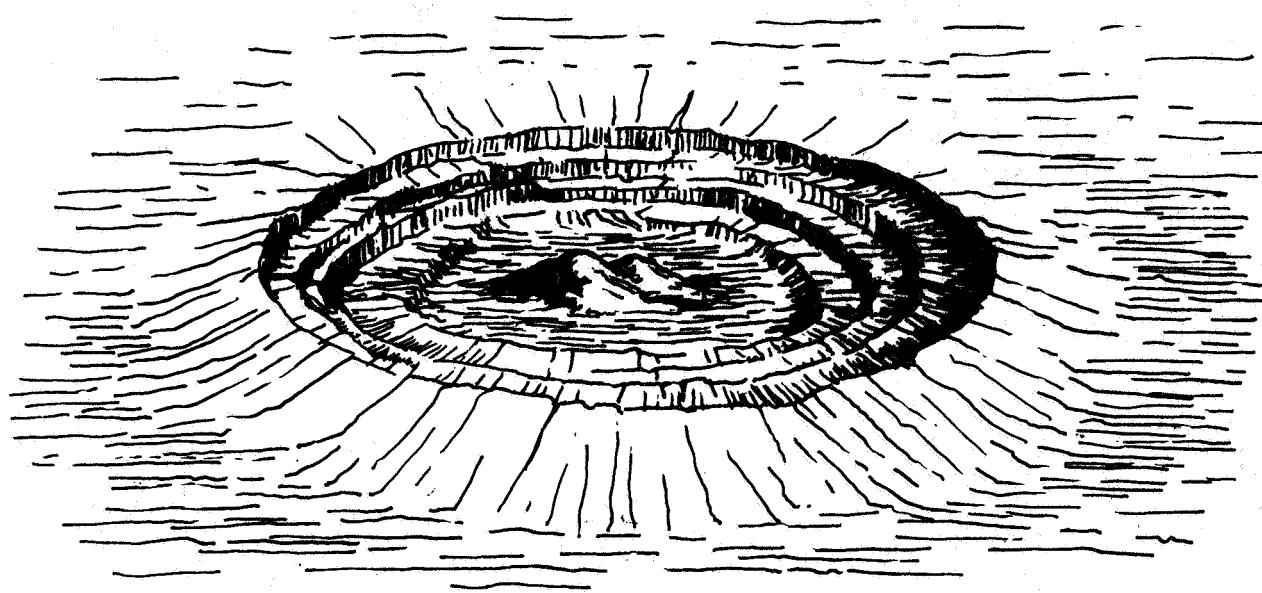
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## BIBLIOGRAPHY OF CHEMICAL PRODUCTS OF VOLCANISM

prepared by

Paul Pushkar and Paul E. Damon



Prepared for the National Aeronautics and Space Administration

(SC-NGR-03-002-076)

Laboratory of Geochronometry and Geochemistry  
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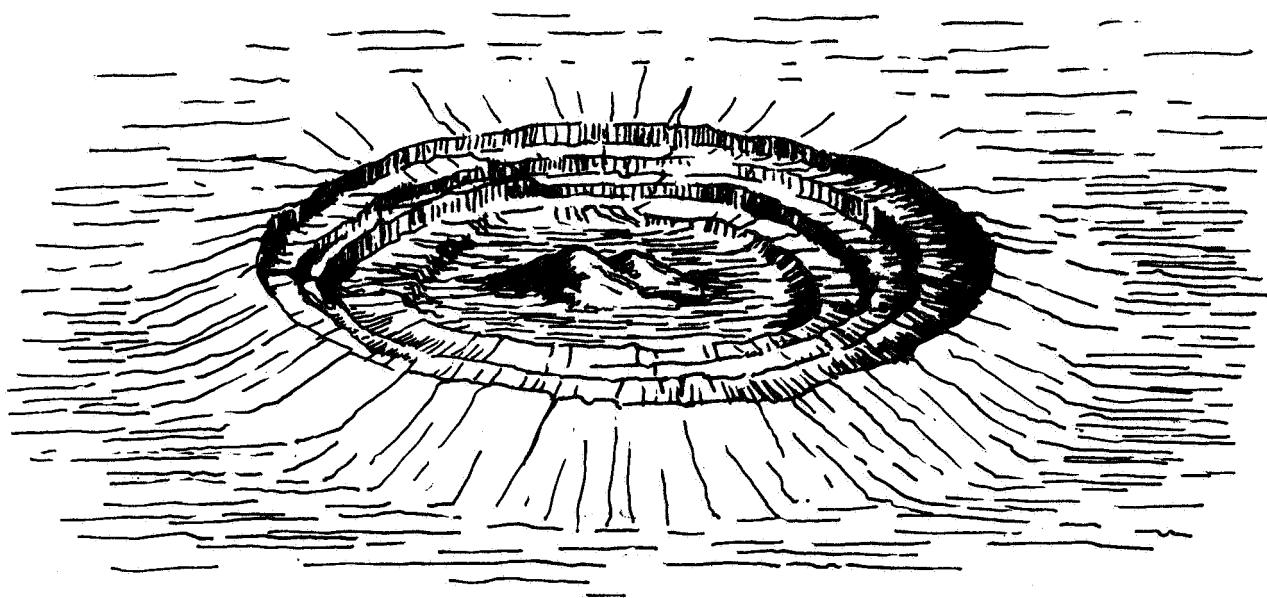
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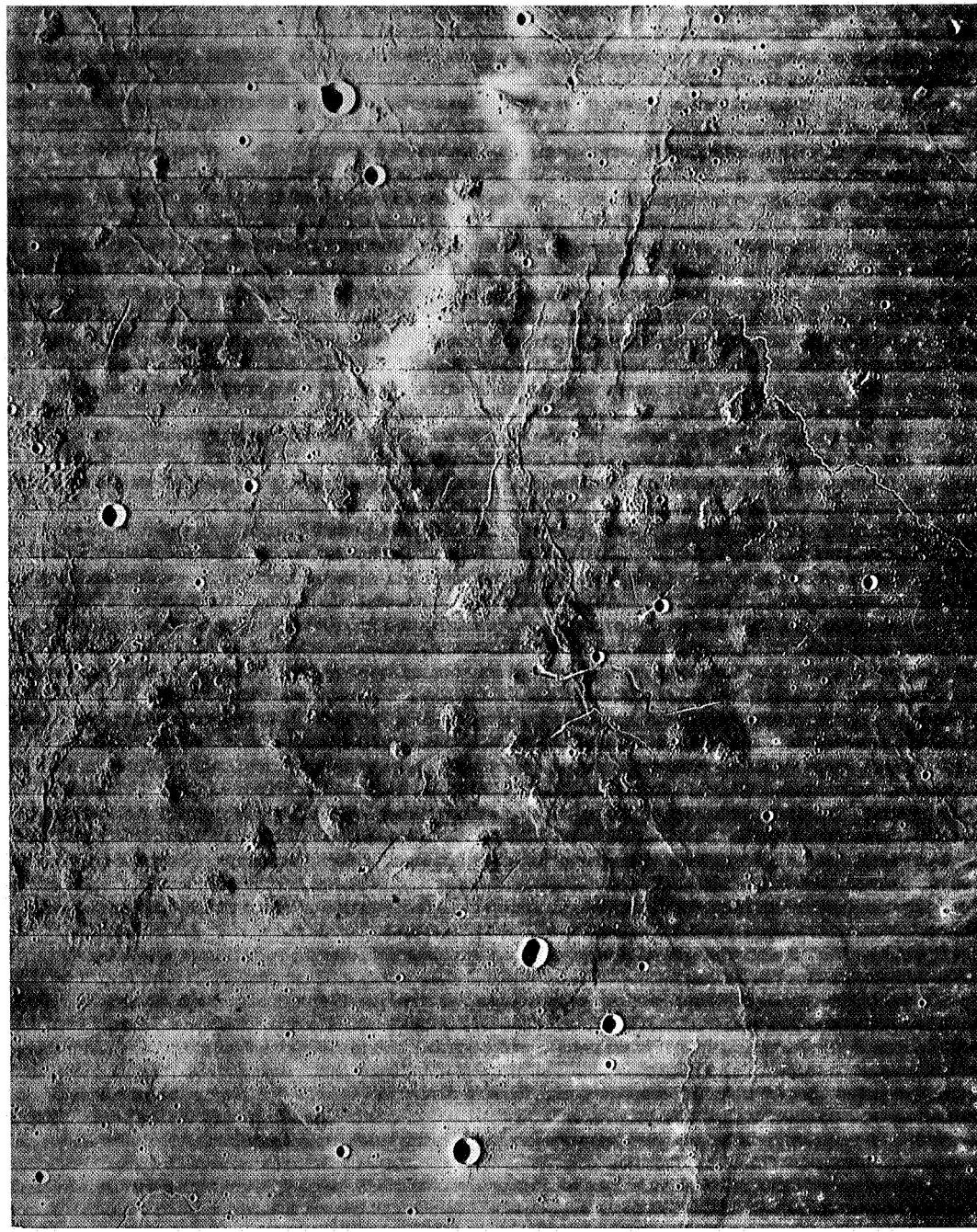
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Lunar Orbiter IV, Frame No. 157

THE MARIUS HILLS: A LUNAR VOLCANIC FIELD?

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## PREFACE

This bibliography was compiled during a one-year literature search on possible volcanic products on the Moon. The bibliography is divided into four sections:

### I. Volcanic Gases and Sublimates, Gases Contained in Rocks, and Related Matters

The literature in these fields, as emphasized recently by White and Waring (1963) is scanty, and for the most part by Russian and Japanese scientists and hence often presents difficulties in access and language to English-speaking scientists. This section is believed to be fairly comprehensive from the present to at least 1935.

### II. Nongaseous Chemical Products of Terrestrial Volcanism

This section deals mostly with unusual and unexpected types of volcanic lavas, including the serpentinite "flow" recently described by Dickinson (1966) but excluding the eruptions of molten sulfur in Japan. The latter are included in the first section. Publications dealing with igneous carbonatites are very numerous and only those dealing with volcanic carbonatites are included here. Tuttle and Gittens (1966) present a very extensive bibliography dealing with all phases of carbonatites.

### III. Gas Contents of Meteorites, Lunar Volcanism, and Related Subjects

The rate of publication of articles dealing with interpretations of the lunar surface has increased tremendously in the past decade. In this section, an effort has been made to include those publications dealing specifically with lunar volcanism as well as several publications presenting general reviews of what is known of the Moon. Also included are publications dealing with gas contents and melting temperatures of tektites and meteorites.

### IV. General References Dealing with Terrestrial Volcanism

The literature dealing with terrestrial volcanism is a tremendously vast one and a comprehensive bibliography would fill many volumes. In this section are listed those publications which best summarize what is known of the principles and mechanisms of volcanology and which present the best descriptions of historic eruptions.

## ACKNOWLEDGMENTS

It is a pleasure to acknowledge the assistance of Mr. William Sulkuske and Mrs. Helen Pushkar in preparing this bibliography. The Lunar and Planetary Laboratory of the University of Arizona kindly granted permission to reproduce the photograph of Laimana Volcano at the beginning of Section I.



White gypsum sublimate covering the slopes of Laimana Volcano, Hawaii, during the 1960 eruption. (Photograph reproduced by the courtesy of the Lunar and Planetary Laboratory, University of Arizona.)

## I

## VOLCANIC GASES AND SUBLIMATES, GASES CONTAINED IN ROCKS, AND RELATED MATTERS.

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## III

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